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Remarks

Claims 1-11 are pending in the application.

Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishimoto et al. (U.S. Published Application 2002/0089724 A1, hereinafter "Nishimoto").

Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishimoto in view of Tanaka et al. (U.S. Published Application 2002/0131711).

Each of the various rejections and objections are overcome by amendments that are made to the specification, drawing, and/or claims, as well as, or in the alternative, by various arguments that are presented.

Entry of this Amendment is proper under 37 CFR 1.116 since the amendment: (a) places the application in condition for allowance for the reasons discussed herein; (b) does not raise any new issue requiring further search and/or consideration since the amendments amplify issues previously discussed throughout prosecution; (c) satisfies a requirement of form asserted in the previous Office Action; (d) does not present any additional claims without canceling a corresponding number of finally rejected claims; or (e) places the application in better form for appeal, should an appeal be necessary. The amendment is necessary and was not earlier presented because it is made in response to arguments raised in the final rejection. Entry of the amendment is thus respectfully requested.

Any amendments to any claim for reasons other than as expressly recited herein as being for the purpose of distinguishing such claim from known prior art are not being made with an intent to change in any way the literal scope of such claims or the range of equivalents for such claims. They are being made simply to present language that is better in conformance with the form requirements of Title 35 of the United States Code or is simply clearer and easier to understand than the originally presented language. Any amendments to any claim expressly made in order to distinguish such claim from known prior art are being made only with an intent to change the literal scope of such claim in the most minimal way, i.e., to just avoid the prior art in a way that leaves the claim novel

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and not obvious in view of the cited prior art, and no equivalent of any subject matter remaining in the claim is intended to be surrendered.

Also, since a dependent claim inherently includes the recitations of the claim or chain of claims from which it depends, it is submitted that the scope and content of any dependent claims that have been herein rewritten in independent form is exactly the same as the scope and content of those claims prior to having been rewritten in independent form. That is, although by convention such rewritten claims are labeled herein as having been "amended," it is submitted that only the format, and not the content, of these claims has been changed. This is true whether a dependent claim has been rewritten to expressly include the limitations of those claims on which it formerly depended or whether an independent claim has been rewritten to include the limitations of claims that previously depended from it. Thus, by such rewriting no equivalent of any subject matter of the original dependent claim is intended to be surrendered. If the Examiner is of a different view, he is respectfully requested to so indicate.

Rejection Under 35 U.S.C. 103

Claims 1-9

Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishimoto. The rejection is respectfully traversed.

The Applicant reasserts the arguments presented in the response response, and further adds the following arguments in response to the Examiner's response in reference thereto.

The Examiner maintains that Nishimoto teaches the step of "introducing" chromatic dispersion, but the Applicant again respectfully disagrees. The Examiner correctly points out on page 11 of the Office Action that that Nishimoto teaches "applying a reverse wavelength dispersion characteristic to the optical signal (i.e. introducing the opposite wavelength dispersion characteristic)." But, this still is very different from the claimed "introducing a predetermined amount of chromatic dispersion at the receive end of the system," both in terms of context of how it is recited in the claim, and what is actually physically occurring.

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Nishimoto applies "reverse wavelength dispersion" (Examiner's description) strictly to correct for errors resultant from dispersion in the optical channel. In other words, Nishimoto just responds to errors that are already present. Much to the contrary, the invention *intentionally* introduces dispersion to the system not of the "opposite wavelength dispersion" variety for correction purposes, but degrading dispersion for the explicit purpose of causing errors, after which those produced errors (BER) will be analyzed to ascertain the "residual chromatic dispersion." As explained in the previous response, "residual chromatic dispersion" refers to chromatic dispersion "within the system" (page 3, lines 24-5), *not* the optical channel to which Nishimoto is directed. At no time does Nishimoto ever teach *causing* bit errors, intentionally or otherwise. Once again, it would not behoove Nishimoto to do so, as that invention claims "a dispersion compensating method," whereas the Applicant claims "a method for measuring residual chromatic dispersion."

The Applicant respectfully requests the Examiner withdraw the rejection.

Please refer to the following arguments presented in response to the previous office action as a basis for the above, and in combined consideration with the above, as a response to the Examiner's additional arguments presented in the Final Office Action.

Nishimoto is directed toward a method of compensating for dispersion effects in an optical transmission path by way of measuring the bit error rate (BER) of a received signal, transmitting that BER information to a control circuit, and then specifying alterations to the optical transmission path (through variable dispersion compensation) to mitigate the observed dispersion-related BER effects (Abstract, par. 18).

The Office Action interprets Nishimoto as teaching Applicant's claimed "method for measuring residual chromatic dispersion in an optical transmission system." This is incorrect. Nishimoto does not measure dispersion. Utilizing BER, Nishimoto determines if an appropriate compensation for dispersion in the optical channel is in place. But, there is no measurement or characterization of the actual dispersion, much less the residual dispersion. Generally speaking, Nishimoto teaches a compensating method (that still

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leaves some residual dispersion), while the claimed invention concerns a measuring method. Moreover, the claimed invention measures “residual or net dispersion.” The Applicant explains this type of dispersion with the following:

“*dispersion compensation modules do not compensate or effectively eliminate the chromatic dispersion within the system. There is still some uncompensated chromatic dispersion known as residual or net chromatic dispersion*” (page 3, lines 24-27, emphasis added).

Nishimoto *reacts* to bit errors arising from dispersion in the optical channel, by “changing optical characteristics of the optical signal input via the *optical transmission path*” (par. 18). The claimed invention, in contrast, is directed to “introducing a predetermined amount of chromatic dispersion at the *receive end* of the system; measuring a bit error rate for the system corresponding to the predetermined amount of chromatic dispersion; and iterating the introducing and measuring steps over a plurality of introduced chromatic dispersion values until the bit error rate is a minimum over all measured bit error rate, wherein the residual chromatic dispersion in the optical transmission system is represented by a complement of the introduced amount of chromatic dispersion at which the minimum bit error rate is achieved.”

Nowhere in Nishimoto is the claim element of “introducing” chromatic dispersion taught, for any purpose. It would not stand to reason that introducing chromatic dispersion *should* be taught in Nishimoto’s either, since Nishimoto’s teaches a dispersion compensation method, “so that bit errors of the optical signal are reduced” (par. 18, emphasis added), not the claimed “method for measuring” dispersion, where it is acceptable to add bit errors to the system for the purpose of analysis. Supporting this major difference in functionalities between inventions, is also the fact that all dispersion compensation adjustments being performed on “the optical transmission path” (par. 18) in Nishimoto, whereas all are directed at “the receive end of the system” in the claimed invention. Hence, in addition to the largely contrasting methods of the two inventions, the respective apparatuses of the two inventions are also very different.

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Therefore, Nishimoto clearly does not anticipate the claimed invention, and the rejection should be withdrawn.

Claims 10-11

Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishimoto in view of Tanaka. The rejection is traversed.

The combination of Nishimoto and Tanaka fails to teach or suggest all of the claim elements of independent claims 10 and 11.

Independent claims 10-11 are directed respectively to an apparatus and method for measuring the residual chromatic dispersion at an intermediate location in an optical transmission system.

For the same reasons set forth above, Applicant submits that claims 10-11 are also patentable under 35 U.S.C. 103(a) over Nishimoto.

Tanaka fails to bridge the substantial gap between Nishimoto and Applicant's invention of claims 10-11. Like Nishimoto, Tanaka also teaches a method/apparatus that adjusts for dispersion effects *in the transmission path*, but does not introduce chromatic dispersion for the purpose of measuring residual or net dispersion *in the system*. The same arguments as to why Nishimoto does not anticipate the claimed invention, therefore, also apply to Tanaka.

Consequently, the rejection should be withdrawn.

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Conclusion

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It is respectfully submitted that the Office Action's rejections have been overcome and that this application is now in condition for allowance. Reconsideration and allowance are, therefore, respectfully solicited.

If, however, the Examiner still believes that there are unresolved issues, the Examiner is invited to call Eamon Wall at (732) 530-9404 so that arrangements may be made to discuss and resolve any such issues.

Respectfully submitted,

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